

REMARKS / DISCUSSION OF ISSUES

The present amendment is submitted in response to the Office Action mailed June 22, 2009, Claims 1-8 and 10-12 remain in this application. Claims 1 and 12 have been amended. Claims 9 and 13 have been cancelled without prejudice or disclaimer. In view of the remarks to follow, reconsideration and allowance of this application are respectfully requested.

Interview Summary

Applicants appreciate the courtesy granted to Applicant's attorney, Michael A. Scaturro (Reg. No. 51,356), during a telephonic interview conducted on Wednesday, September 23, 2009. During the telephonic interview, Applicant's attorney discussed proposed amendments to claims 1 and 12. The Examiner pointed out an error with regard to the proposed amendment to claim 1. Applicant's attorney indicated that the limitation should correctly read "1 Hz" and not "1 kHz" as written. With regard to claim 12, the discussion was directed to possible 112, second paragraph issues with the claim. The Examiner suggested possible alternative language to overcome such objections. The discussion then turned to claims 4 and 8. Specifically, with regard to their novelty apart from being dependent upon independent claim 1. The Examiner indicated that in light of the proposed amendments a further search is warranted and as a consequence no agreement was reached.

Allowable Subject Matter

Applicant wishes to thank the Examiner for indicating that Claim 2 would be allowable if rewritten to overcome the rejection under U.S.C. 112, 2nd paragraph and to include all of the limitations of the base claim and any intervening claims.

Objection to the Specification

Prior to discussing the substantive objections to the specification, Applicants note that the specification has been amended to correct the equations disclosed at page 5 with the correct equations disclosed in claim 2.

In the Office Action, the disclosure was objected to for not including an abstract of the disclosure as required by 37 CFR 1.72(b). By means of the present amendment, the current

Abstract as shown is provided which is believed to overcome the objection. Withdrawal of the objection is respectfully requested.

In the Office Action, the Specification was objected to for failing to include section headings. Applicants respectfully decline to add headings as they are not required in accordance with MPEP §608.01(a).

35 U.S.C. §112, second paragraph

Claims 1-13 stand rejected under 35 U.S.C. §112, second paragraph as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention. The rejection of claims 1-13 is understood to be based on the premise that the phrase “can be” in claim 1, and the phrases “certain standard specification” and “standard specification” in claim 9 render the claims indefinite because elements in the art of varying size, dimensions, properties, etc., could all be considered to be conventional, standard or normal. Claims 1 and 9 have been amended in a manner which is believed to overcome the rejections.

Rejections under 35 U.S.C. §101

Claims 12 and 13 stand rejected under 35 U.S.C. §101 as being allegedly directed to non-statutory subject matter. The rejection is understood to be based on the premise that the claims are directed to a “program” or “software” per se as recited in the preamble and as such are non-statutory subject matter. The Office further states that claims to processes that do nothing more than install a program or software in a computer or concepts are non-statutory if the “acts” of a claimed process manipulate only numbers, abstract concepts or ideas, or signals representing any of the foregoing, the acts are not being applied to appropriate subject matter. Applicants have amended claim 12 in a manner which is believed to overcome the rejection. Claim 13 is cancelled without prejudice or disclaimer, with its limitations incorporated into claim 12.

I. *Claim Rejections under 35 USC 102*

A. *Rejection of Claims 1, 3, 4 and 8*

In the Office Action, Claims 1, 3, 4 and 8 stand rejected under 35 U.S.C. §102(b) as being anticipated by U.S. Patent No. 6,108,296 (“Kajiyama”). Applicants respectfully traverse the rejections.

Claims 1, 3, 4 and 8 are allowable

Independent Claim 1 has been amended herein to better define Applicant’s invention over Kajiyama. Claim 1 now recites limitations and/or features which are not disclosed by Kajiyama. Therefore, the cited portions of Kajiyama do not anticipate claim 1, because the cited portions of Kajiyama do not teach every element of claim 1. For example, the cited portions of Kajiyama do not disclose or suggest, “*Record carrier comprising a predetermined spiral which spiral is described using parameters, the record carrier further comprising a side-channel carrying side-channel information encoded by modulating at least one of the parameters in a pre-determined way, wherein the modulation of the at least one of the parameters is a low frequency modulation below 1 Hz, and wherein the modulation of the at least one of the parameters is within the predetermined upper and lower boundaries of parameters defined by the record carrier type*”, as recited in claim 1 (Emphasis Added).

According to the invention, it is proposed to master data on an original medi using a modulated parameter, such as, for example, a modulated a trackpitch D_{tp} and/or a modulated channel-bit length L_{cb} . The parameter is slowly modulated in a pre-determined pattern. Referring to Fig. 1 of Applicants’ specification, there is shown an embodiment of the record carrier according to the invention. The record carrier 1 has a central aperture 2 and an information area 3. The record carrier 1 can be both of a read-only type (e.g. a DVD-Video disc), and of a recordable type (e.g. a DVD+RW disc). In the embodiment shown, it is proposed to master the data on the original media using a trackpitch D_{tp} and a channel-bit length L_{cb} which is **slowly modulated in a pre-determined pattern**.

In contrast to claim 1, Kajiyama provides a device in which micro-pits (pit length: 1T, for example) are recorded in an optical disc beforehand. A determination is made whether the subject disc is a normal disc or not based on whether these micro-pits are normally detected or not, and readout of the subject disc is enabled or disabled based on such determination. Kajiyama discloses that the micro-pits are recorded on the optical disc in dedicated areas with very short IT 1T-length structures, which are shorter than the standard 3T to 11T structures. These micro-pits get deformed in the copying process and therefore become undetectable, thereby disabling readout of the subject disc. See Kajiyama, col. 1, lines 39-64. Applicants respectfully submit that utilizing additional micro-pits in a dedicated area, as taught in Kajiyama, is different from employing a low frequency modulation to at least one of the parameters of the record carrier. Further, the micro-pits utilized in Kajiyama are not within the predetermined upper and lower boundaries of parameters defined by the record carrier type. Specifically, the micro-pits to be inserted in the dedicated areas of the optical disc have very short 1T-length structures - shorter than the standard 3T to 11T structures. These very short 1T-length structures do not conform to industry standards for parameters of an optical recording medium. In other words, the micro-pits of Kujiyama are not within the predetermined upper and lower boundaries of parameters defined by the record carrier type, as recited in claim 1. Hence claim 1 is allowable.

Claims 3, 4 and 8 depend from independent Claim 1, which Applicants have shown to be allowable. Accordingly, claims 3, 4 and 8 are also allowable, at least by virtue of their dependency from claim 1.

Further, the dependent claims recite additional features that are not disclosed or suggested by Kajiyama. For example, the cited portions of Kajiyama do not disclose or suggest wherein the channel bit length in a first area has a different value than the channel bit length in another, second area, as in claim 4. The Office Action states that “Kajiyama shows channel pit length in a first area has different values than a second area.” Applicants respectfully disagree. Kajiyama teaches that the pit length is not always limited to 1T, but can

be determined as values which enable the micro-pit to be optically detected considering the diameter of a laser beam spot for reading. See Kujiyama, col. 3, lines 21-30. It should be understood that whatever value is chosen for the micro-pit in Kujiyama, that value is an exclusively used value, without variation. Accordingly, the cited portions of Kujiyama do not disclose or suggest, wherein the channel bit length in a first area has a different value than the channel bit length in another, second area, as in claim 4. For this additional reason, claim 4 is allowable.

As a further example, the cited portions of Kajiyama do not disclose or suggest “*Record carrier as claimed in claim 1, wherein the parameter modulated is the track pitch*”, as in claim 8. The Office Action states that “track pitch is inherent in every optical recording medium.” While this may be true, Applicants respectfully point out that the track pitch is normally assumed to be constant for the entire disc and it is not well known to modulate the track pitch over the area of the disc. Accordingly, the cited portions of Kajiyama do not disclose or suggest “*Record carrier as claimed in claim 1, wherein the parameter modulated is the track pitch*”, as in claim 8. For this additional reason, claim 8 is allowable.

B. Rejection of Claims 1, 8, 9, 10, 12 and 13

In the Office Action, Claims 1, 8, 9, 10, 12 and 13 stand rejected under 35 U.S.C. §102(b) as being anticipated by U.S. Patent Application No. 2002/0114460 (“Bentvelsen”). Applicants respectfully traverse the rejections.

Claims 1, 8, 9 and 10 are allowable

Independent Claim 1 has been amended herein to better define Applicant’s invention over Bentvelsen. Claim 1 now recites limitations and/or features which are not disclosed by Bentvelsen. Therefore, the cited portions of Bentvelsen do not anticipate claim 1, because the cited portions of Bentvelsen do not teach every element of claim 1. For example, the cited portions of Bentvelsen do not disclose or suggest, “*Record carrier comprising a predetermined spiral which spiral is described using parameters, the record carrier further comprising a side-channel carrying side-channel information encoded by modulating at least*

one of the parameters in a pre-determined way, wherein the modulation of the at least one of the parameters is a low frequency modulation below 1 Hz, and wherein the modulation of the at least one of the parameters is within the predetermined upper and lower boundaries of parameters defined by the record carrier type”, as recited in claim 1 (Emphasis Added). In contrast to claim 1, Bentvelsen encodes a secondary signal of a secondary channel, which may also be called side channel or hidden channel, in a primary signal of a primary channel comprising the original data to be transmitted or to be stored by controlled distortion which distortion may be detected in a Phase Locked Loop (PLL) circuit locked to the primary signal. The pit and land pattern or the mark and space pattern, respectively, of the primary signal is deliberately distorted by the secondary signal at an encoding stage in a controlled way such that the PLL circuit of a detector can still accommodate for it. The error signals of the PLL circuit will then contain the information of the secondary signal of the secondary channel. Bentvelsen discloses the use of extremely short range "misplacements" of structures. See Bentvelsen, Figures 1 and 2. Applicants invention is directed to very slow, long range modulations over large regions, e.g., areas and bands. It is well known in the art of optical recording that parameters such as “channel bit length” and “track pitch” refer to long range averages. Hence, modulation of such parameters result in the modulation of the average “channel bit length” or “track pitch” over the entire data area. Applicants respectfully submit that modulation of the average “channel bit length” or “track pitch” over the entire data area is different than utilizing short range "misplacements" of structures, as taught in Bentvelsen. Hence, claim 1 is allowable.

Claims 8, 9, and 10 depend from independent Claim 1, which Applicants have shown to be allowable. Accordingly, claims 8, 9, and 10 are also allowable, at least by virtue of their dependency from claim 1.

Claims 12 and 13 are allowable

Claim 12 has been amended in a manner which is believed to overcome the rejection. Specifically, Claim 12 has been amended to recite that the record carrier further comprises a computer program comprising software arranged for performing an integrity check of the record carrier without the need for external contact, or key-number information from a lable

to be entered by a user. The method comprises, detecting the side-channel on the record carrier; detecting spiral information on the record carrier; comparing the detected side-channel with the detected spiral information to determine whether the record carrier is original; declaring the record carrier as original in the case where the comparision results in a match, and; declaring the record carrier as a copy in the case where the comparision does not result in a match. Applicants respectfully submit that the method steps described above, and as claimed in claim 12, are novel and unobvious over Bentvelsen. Bentvelsen teaches that local phase errors are inserted in the bitstream of the primary signal. Thus, at least parts of the stream of lands and marks of the primary signal is displaced with a positive or negative phase error which can be detected by the PLL circuit of a detector. Thus, a part of the normal stream of lands and marks is cut out and placed back at slightly shifted position the shift being at maximum half of the channel clock period, preferably 20% to 50% of the channel clock period. See Bentvelsen, par. [0007]. It is respectfully submitted that detecting negative and positive phase errors of streams of lands and marks of a primary signal displaced with a positive or negative phase error via a PLL circuit of a detector, as taught in Bentvelsen is different from detecting the side-channel on the record carrier; detecting spiral information on the record carrier; comparing the detected side-channel with the detected spiral information to determine whether the record carrier is original. Hence, claim 12 is allowable.

II. *Claim Rejections under 35 USC 103*

A. Rejection of Claim 5-7 and 11

The Office has rejected claims 5-7 and 11 under 35 U.S.C. §103(a) as being unpatentable over Kajiyama. Applicants respectfully traverse the rejections.

Claims 5-7 and 11 depend from independent Claim 1, which Applicants have shown to be allowable. Accordingly, claims 5-7 and 11 are also allowable, at least by virtue of their dependency from claim 1.

Further, the dependent claims recite additional features that are not disclosed or suggested by Kajiyama. The Office states that the data in optical recording medium can be modulated into any suitable fashions, constant modulation within the band, variation modulated within the band, constant modulated within the band, etc.. The Office states that it would have been obvious to modulate channel bit length on different bands as claimed. Applicants respectfully disagree. By encoding only about 10 bits of information in, for example, 5 bands, it is possible to avoid the time and computation intensive process of accurately estimating spiral parameters to yield accurate disc-parameter estimates.

Applicant's specification discloses at pages 11-12:

It must be noted that accurate estimation of spiral parameters is a time- and computation-intensive process as many jumps have to be made to collect information on the disc, and then the data has to be processed to high accuracy to yield accurate disc-parameter estimates. However for the purpose of this invention a very high accuracy is not always required. In essence it is sufficient when the probability of a rewritable/recordable disc to yield the same D_{tp} and L_{cb} as an original disc to be negligible, say 1:1000 (so a hacker has to make copies on 500 different discs on average before one works). I.e. only about 10 bits of information need to be encoded in the description of the spiral. E.g. the spiral could have a fixed D_{tp} and L_{cb} for, say, 5 bands, which would work if D_{tp} and L_{cb} yielded 2 bits in every band. Lower required accuracy implies fewer measurements and less computation. In Fig. 8 such a record carrier according to the invention is shown. In this record carrier 1 the channel bit length is modulated in different bands A, B, C, D. Each band is situated in a certain distance interval with respect to the center of the record carrier. In each band the channel bit length is modulated so that it has in a certain band a value different from the channel bit length in another band (this is not depicted in Fig. 8). From the modulations in the different bands the encoded side-channel is extracted.

For at least these additional reasons, claims 5-7 and 11 are allowable.

Conclusion

In view of the foregoing amendments and remarks, it is respectfully submitted that all claims presently pending in the application, namely, Claims 1-8, 10-12 are believed to be in condition for allowance and patentably distinguishable over the art of record.

If the Examiner should have any questions concerning this communication or feels that an interview would be helpful, the Examiner is requested to call Mike Belk, Esq., Intellectual Property Counsel, Philips Electronics North America, at 914-945-6000.

Respectfully submitted,



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